NuPhotonics

Rev. 1.0 – April 2026

25G InGaAs PIN Photodiode TIA ROSA-FC Package

Description

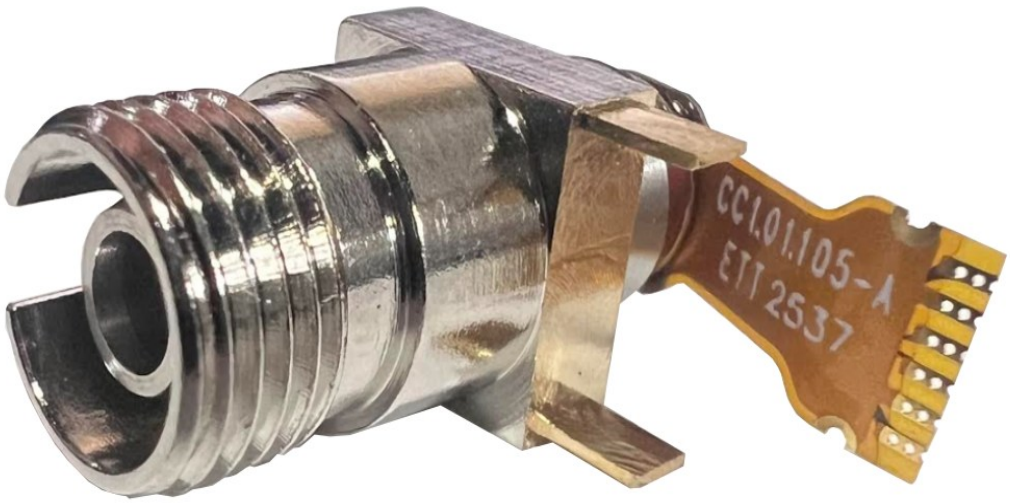
A 25 Gb/s InGaAs PIN photodiode packaged with a transimpedance amplifier (TIA). This device is packaged in a TO-Can with FC bulkhead receptable. It comes configured with a Flex PCB. Offering flat response and a broad temperature operating range. This device can be easily soldered to a PCB for mechanically rigidity.

Features

- TO-Can Package
- FC-Receptacle
- 25 Gbps
- Wide temperature operating range
- Received signal strength indicator
- TIA Built in
- 1K Ohm Transimpedance Gain
- PCB solderable mount

Applications

- 5G
- RF over Fiber (RFoF)



Photodiode Electro-Optical Characteristics (T_{op} 23 ± 3°c, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Supply Voltage	V_{cc}	2.9	3.3	3.6	V	
Supply Current	I_{cc}		30	35	mA	V_{cc} = 3.3 V
Response Spectrum	λ	1260		1610	nm	V_{cc} = 3.3 V
Bandwidth	BW		21		GHz	-3 dB bandwidth
Saturation	Sat		3		dBm	V_{cc} = 3.3 V
Sensitivity	Sen			-14	dBm	10.30 Gbps, 1310 nm, ER = 4.5 dB, BER = 10^{-12}
Optical Return Loss	ORL			-27	dB	CW = 1310 nm
RSSI Offset Current	I_{RSS}			100	nA	V_{cc} = 3.3 V
Responsivity	R	0.7	0.8		A/W	1310 nm, 50 % VBR, M=2, Pin -20 dBm
Dark Current	Id		25	100	nA	VBr
Output Impedance	Z_o		100			Differential
Maximum Output Voltage	Vo		300		mV_{p-p}	Differential
Low Frequency Cutoff	F_{low}		10		KHz	

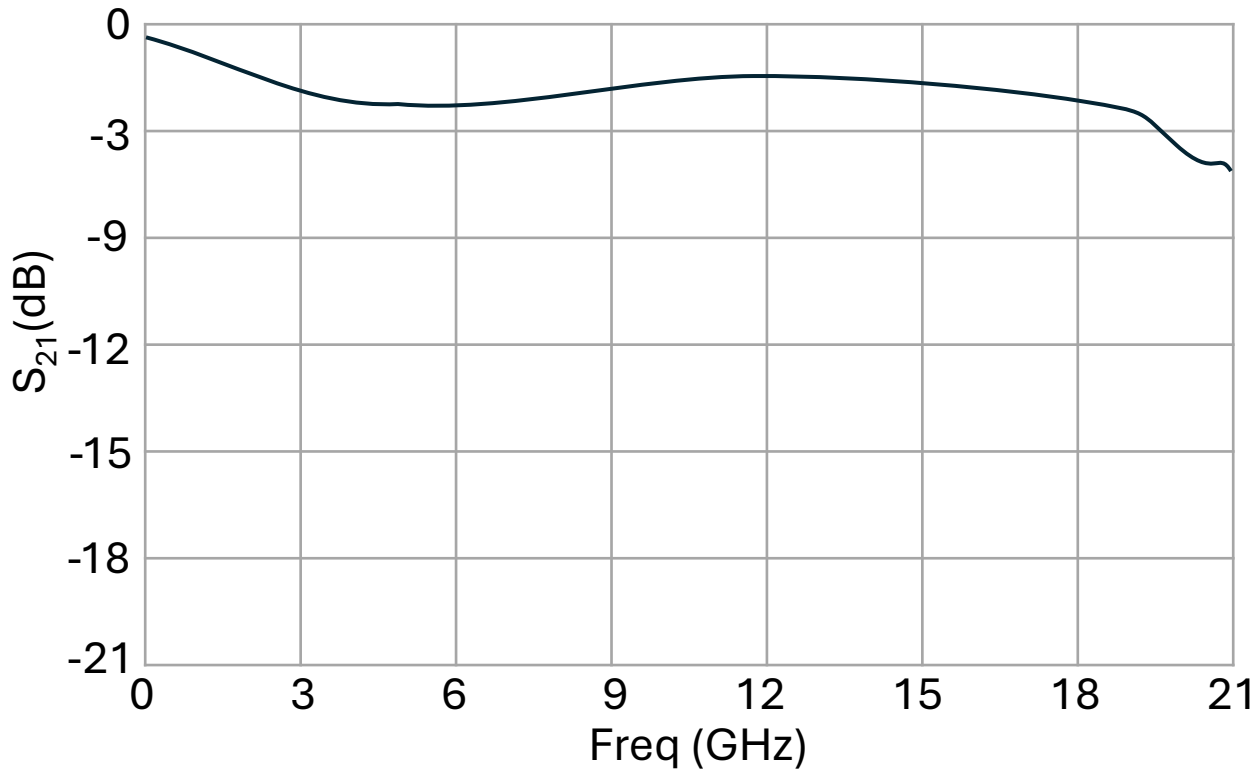
Photodiode Absolute Maximum Ratings

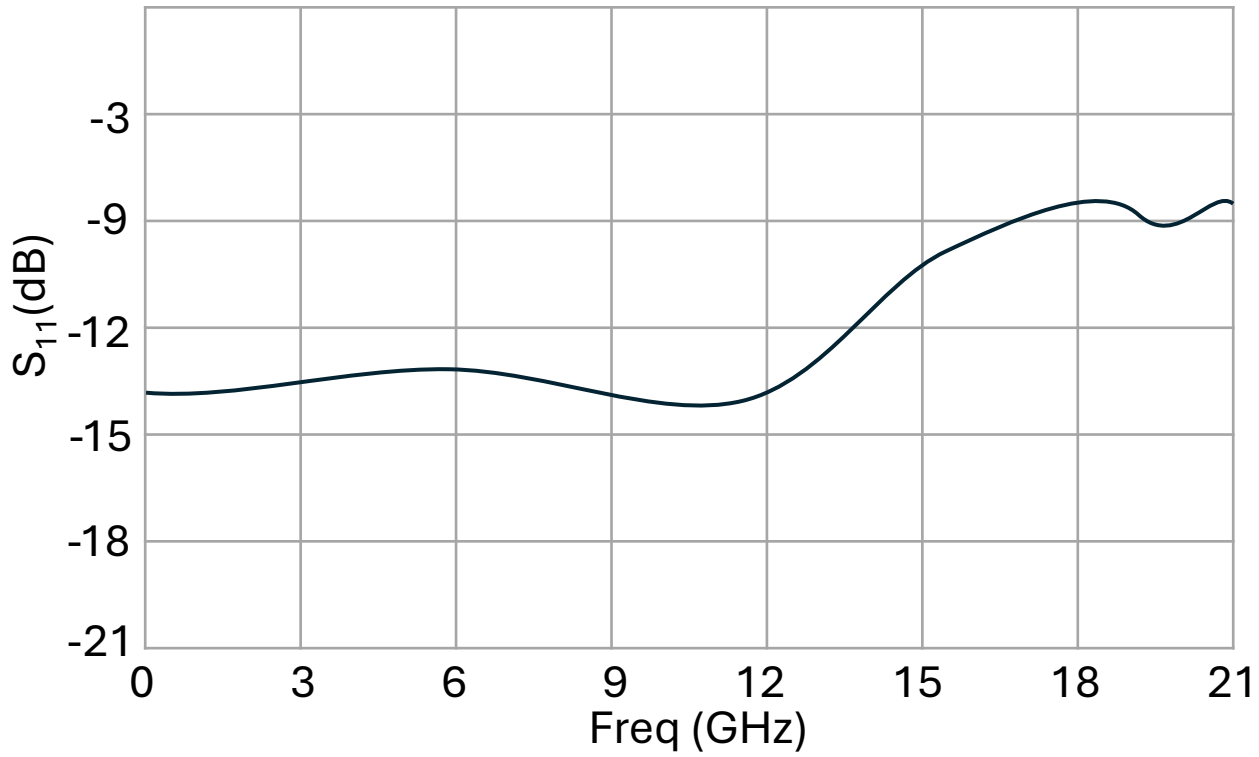
Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	V			3.6	V
Input Optical Power	P_{in}			5	dBm
Storage Temperature	T_{stg}		-40	90	°C
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		-40	85	°C
Soldering Temperature	T_{st}	10 sec		260	°C
ESD Susceptibility		HBM	100		V

Operating at maximum operating specs for prolong periods of time will damage the device.

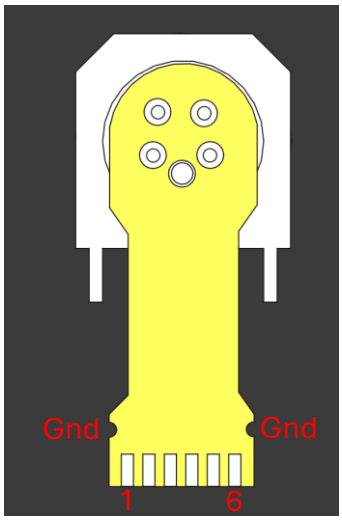
Typical Performance Curves (Top 23°C, 801 PTs, 16 AVGs, 1.5% smoothing)

RF performance dependent on PCB design and optimization. Data shown for Rogers ® RO3003 with Ground-backed Co-planner waveguide (GB-CPW). The GB-CPW was de-embedded. Single ended measurement, port two is terminated with 50 Ohm load

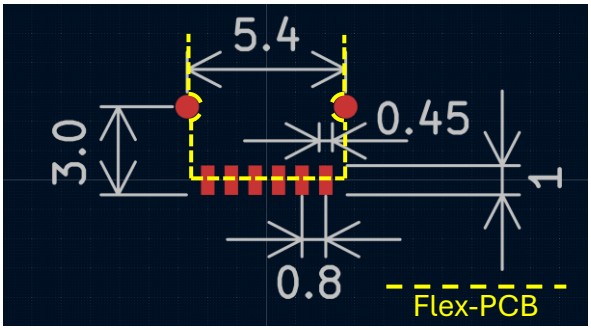




Device Pinout

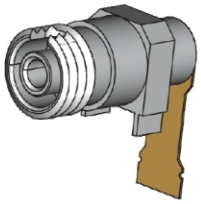


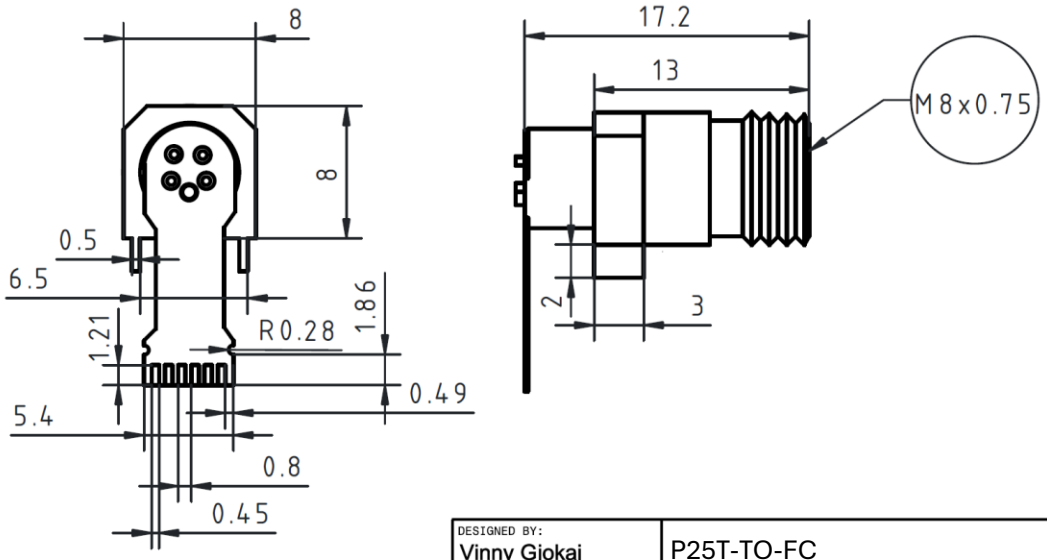
Pin	Function
1	VCC
2	Gnd
3	Dout +
4	Dout -
5	Gnd
6	Imon



Recommended PCB Footprint (all units in mm)

Mechanical Drawing





DESIGNED BY: Vinny Gjokaj	P25T-TO-FC Exterior Mechanical Drawing		G _
DATE: April 16 2026			F _
SIZE A4	[All Units in mm]		E _
			D _
SCALE 3:1	WEIGHT (kg) Weight	DRAWING NUMBER Revision 1.0	SHEET A4-Paper C _ B _ A _

Device dimensions are subject to change without notice.

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Revision History

1.0 – April 2026 – Initial Release